

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

STINGRAY IP SOLUTIONS, LLC

Plaintiff,

v.

SIGNIFY N.V., ET AL

Defendants.

Civil Action No. 2:21-cv-00043-JRG

Civil Action No. 2:21-cv-00044-JRG

SIGNIFY N.V.'S RESPONSIVE CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

TABLE OF AUTHORITIES	iv
TABLE OF EXHIBITS	v
GLOSSARY	vi
ARGUMENT	1
I. PREAMBLES OF THE ASSERTED TERMS.....	1
A. “A communication method for a wireless communication network comprising a plurality of mobile nodes each comprising a data queue, the method comprising” (’986 Patent, cl. 25)	3
B. “A method for routing message data from a source node to a destination node in a mobile ad hoc network comprising a plurality of intermediate mobile nodes between the source node and the destination node, and a plurality of wireless communication links connecting the nodes together, the method comprising” (’310 Patent, cl. 13).....	4
C. “A method for operating a mobile ad hoc network comprising a plurality of wireless mobile nodes and a plurality of wireless communication links connecting the plurality of nodes together over a plurality of electrically separate wireless channels, the method comprising” (’426 Patent, cl. 8)	4
D. “A mobile ad-hoc network (MANET) comprising” (’117 Patent, cl. 24) / “An intrusion detection method for a mobile ad-hoc network (MANET) comprising a plurality of nodes, the method comprising” (’117 Patent, cl. 55)	5
E. “An intrusion detection method for a wireless local or metropolitan area network comprising a plurality of stations, the method comprising” (’678 Patent, cl. 51)	6
F. “A method for dynamic channel allocation in a mobile ad hoc network comprising a plurality of wireless mobile nodes and a plurality of wireless communication links connecting the plurality of wireless mobile nodes together over a plurality of separate channels at different frequencies, the method comprising” (’961 Patent, cl. 1)	6
II. “MOBILE NODE(S)” AND “MOBILE AD HOC NETWORK / MANET” TERMS	7
A. “mobile node(s)” (’986 Patent, cl. 9, 25; ’310 Patent, cl. 13; ’426 Patent, cl. 8, 18; ’961 Patent, cl. 1)	7

B.	“mobile ad hoc network” / “MANET” (’310 Patent, cl. 13; ’426 Patent, cl. 8, 18; ’117 Patent, cl. 24, 55; ’961 Patent, cl. 1)	10
III.	U.S. Patent No. 6,958,986.....	12
A.	“semi-permanent time slots” (claims 9 and 25)	12
B.	“demand assigned time slots” (claims 9 and 25).....	14
C.	“link utilization metrics” (claims 9 and 25).....	15
IV.	U.S. Patent No. 6,961,310.....	16
A.	“link metric” (claim 13)	16
B.	“routes” (claim 13)	17
V.	U.S. Patent Nos. 7,082,117 and U.S. 7,224,678	18
A.	“operating in a contention-free mode” and “contention-free periods”/ “CFPs” (claims 24 and 55 of the ’117 Patent).....	18
B.	“intrusion alert” (claims 24 and 55 of the ’117 Patent; claims 12 and 51 of the ’678 Patent).....	20
VI.	U.S. Patent No. 7,440,572.....	21
A.	“encrypting both address and data information” and “decrypting both the address and data information” (claim 1)	21
VII.	U.S. Patent No. 7,616,961.....	22
A.	“monitoring link performance on a first channel” (claim 1).....	22
VIII.	CLAIM LIMITATIONS GOVERNED BY 35 U.S.C. § 112 ¶ 6.....	22
A.	The “route discovery unit...” and “route selection unit...” (claim 18 of the ’426 Patent)	23
B.	The “policing node...” (claim 24 of the ’117 Patent) and the “policing station...” (claim 12 the ’678 Patent)	26
C.	The “cryptography circuit...” (claim 1 of the ’572 Patent).....	28
	CONCLUSION.....	30

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Bicon, Inc. v. Straumann Co.</i> , 441 F.3d 945 (Fed. Cir. 2006).....	1
<i>Canon, Inc. v. TCL Elecs. Holdings Ltd.</i> , No. 2:18-CV-546-JRG, 2020 U.S. Dist. LEXIS 76751 (E.D. Tex. May 1, 2020)	23
<i>Egenera, Inc. v. Cisco Sys.</i> , 972 F.3d 1367 (Fed. Cir. 2020).....	24
<i>HTC Corp. v. IPCom GmbH & Co.</i> , KG, 667 F.3d 1270 (Fed. Cir. 2012).....	24
<i>Oak Tech., Inc. v. ITC</i> , 248 F.3d 1316 (Fed. Cir. 2001).....	14
<i>Uniloc 2017 LLC v. Verizon Communs., Inc.</i> , No. 2:18-cv-00536-JRG, 2020 U.S. Dist. LEXIS 27600 (E.D. Tex. Feb. 17, 2020)	3
<i>Whirlpool Corp. v. TST Water, LLC</i> , No. 2:15-CV-1528-JRG, 2016 U.S. Dist. LEXIS 96301 (E.D. Tex. July 22, 2016).....	1
<i>Williamson v. Citrix Online, LLC</i> , 792 F.3d 1339 (Fed. Cir. 2015).....	23, 26, 28
Statutes	
35 U.S.C. § 112 ¶ 6.....	<i>passim</i>
Other Authorities	
M.P.E.P. § 2181	23

TABLE OF EXHIBITS

Exhibit	Reference
A	Annotated language of Asserted Claims
1	U.S. Patent No. 6,958,986 (“’986 Patent”)
2	U.S. Patent No. 6,961,310 (“’310 Patent”)
3	U.S. Patent No. 7,027,426 (“’426 Patent”)
4	U.S. Patent No. 7,082,117 (“’117 Patent”)
5	U.S. Patent No. 7,224,678 (“’678 Patent”)
6	U.S. Patent No. 7,440,572 (“’572 Patent”)
7	U.S. Patent No. 7,616,961 (“’961 Patent”)
8	Annotated Excerpts of File History for ’426 Patent – Applicant’s Appeal Brief (Oct. 11, 2005)
9	Annotated Excerpts of File History for ’426 Patent – Applicant’s Amendment After Final Action (Aug. 5, 2004)
10	Excerpts of Academic Press Dictionary of Science & Technology (1992)
11	Annotated U.S. Patent No. 6,850,532
12	Annotated Nesargi & Prakash, Proceedings.Twenty-First Annual Joint Conference of the IEEE Computer and Communications Societies, <i>MANETconf: Configuration of Hosts in a Mobile Ad Hoc Network</i> (2002)
13	Annotated U.S. Patent Publication No. 2004/0025018
14	Annotated Excerpts of File History for ’117 Patent – Applicant’s Amendment After Non-Final Action (Feb. 27, 2006)
15	Annotated Excerpts of File History for ’678 Patent – Applicant’s Appeal Brief (May 9, 2005)
16	Annotated Excerpts of File History for ’678 Patent – Application’s Supplemental Appeal Brief (Oct. 31, 2005)
17	Annotated Excerpts of File History for ’961 Patent – Applicant’s Amendment After Non-Final Action (Mar. 16, 2005)
18	Excerpts of The Oxford American College Dictionary (2002)
19	Annotated Excerpts of IEEE Standard 802.11 (1999)
20	Annotated Excerpts of IEEE Standard 802.15.4 (2003)
21	Declaration of Dr. Robert Akl Regarding Claim Construction of Certain Terms in Asserted Patents (“Akl Decl.”)

GLOSSARY

Term	Definition
Signify or Defendant	Defendant Signify N.V.
Stingray or Plaintiff	Stingray IP Solutions, LLC
'986 Patent	U.S. Patent No. 6,958,986
'310 Patent	U.S. Patent No. 6,961,310
'426 Patent	U.S. Patent No. 7,027,426
'117 Patent	U.S. Patent No. 7,082,117
'678 Patent	U.S. Patent No. 7,224,678
'572 Patent	U.S. Patent No. 7,440,572
'961 Patent	U.S. Patent No. 7,616,961
the Patents-in-Suit	U.S. Patent No. 6,958,986; U.S. Patent No. 6,961,310; U.S. Patent No. 7,027,426; U.S. Patent No. 7,082,117; U.S. Patent No. 7,224,678; U.S. Patent No. 7,440,572; U.S. Patent No. 7,616,961
Person of Skill in the Art	POSITA
Stingray IP Solutions' Opening Claim Construction Brief	Op. Br.
MANET	mobile ad-hoc network
Madisetti Decl.	Declaration of Dr. Vijay Madisetti, Ex. H to Plaintiff's Stingray IP Solutions' Opening Claim Construction Brief

Defendant Signify N.V. (“Signify” or “Defendant”) respectfully moves to construe the claims of the Patents-in-Suit as it proposes below. The Asserted Claims are included in Appendix A for the Court’s convenience, highlighting the relevant disputed claim terms. As discussed herein, Plaintiff Stingray attempts to construe the claims to omit key requirements of the claim limitations and to impermissibly broaden their scope or to avoid the effects of claiming in means-plus-function format.

In view of the Court’s familiarity with the governing law, Signify includes no standalone background on the law of claim construction.

ARGUMENT

I. PREAMBLES OF THE ASSERTED TERMS

Signify asserts that the following preambles are limiting: claim 25 of the ’986 Patent, claim 13 of the ’310 Patent, claim 8 of the ’426 Patent, claims 24 and 55 of the ’117 Patent, claim 55 of the ’687 Patent, and claim 1 of the ’961 Patent. Stingray, of course, prefers to ignore them. “[T]he preamble is regarded as limiting if it recites essential structure that is important to the invention or necessary to give meaning to the claim. *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006). “[W]hen the limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention.” *Id.* (internal quotations omitted); *see also Whirlpool Corp. v. TST Water, LLC*, No. 2:15-CV-1528-JRG, 2016 U.S. Dist. LEXIS 96301, at *17 (E.D. Tex. July 22, 2016).

Each of the preambles of the identified claims is relied upon by other claim language for antecedent basis, as summarized in the below table:

Preamble	Claim limitations
'986 Patent, cl. 25. A communication method for a wireless communication network comprising <i>a plurality of mobile nodes each comprising a data queue</i> , the method comprising	scheduling respective semi-permanent time slots to establish communication links between <i>respective pairs of mobile nodes</i> for transmitting data stored in <i>the data queues therebetween</i>
'310 Patent, cl. 13. A method for routing message data from <i>a source node to a destination node in a mobile ad hoc network</i> comprising <i>a plurality of intermediate mobile nodes between the source node and the destination node</i> , and <i>a plurality of wireless communication links connecting the nodes together</i> , the method comprising	at <i>the source node</i> , discovering routing to <i>the destination node</i> ; at <i>the source node</i> , ranking discovered routes according to at least one <i>link metric</i> ; and at <i>the source node</i> , simultaneously distributing the message data to <i>the destination node</i> along a plurality of the discovered routes based upon the ranking.
'426 Patent, cl. 8. A method for operating a mobile ad hoc network comprising <i>a plurality of wireless mobile nodes and a plurality of wireless communication links connecting the plurality of nodes together over a plurality of electrically separate wireless channels</i> , the method comprising	at a source node, sending a route request over <i>each of the plurality of electrically separate channels</i> to discover routing to a destination node; and at the source node, selecting a route to the destination node on at least one of <i>the plurality of electrically separate channels</i> .
'117 Patent, cl. 24. A <i>mobile ad-hoc network (MANET)</i> comprising	a policing node for detecting intrusions into <i>the MANET</i> by . . .
'117 Patent, cl. 55. An intrusion detection method for <i>a mobile ad-hoc network (MANET) comprising a plurality of nodes</i> , the method comprising:	transmitting data between <i>the plurality of nodes</i> , <i>the plurality of nodes</i> intermittently operating in a contention-free mode during contention-free periods (CFPs) and in a contention mode outside CFPs; monitoring transmissions among <i>the plurality of nodes</i> to detect contention-free mode operation outside of a CFP;
'678 Patent, cl. 51. An intrusion detection method for <i>a wireless local or metropolitan area network comprising a plurality of stations</i> , the method comprising	transmitting data between <i>the plurality of stations</i> using a media access layer (MAC), each of the stations having a respective MAC address associated therewith; monitoring transmissions among <i>the plurality of stations</i> to detect failed attempts to authenticate MAC addresses;

Preamble	Claim limitations
'961 Patent, cl. 1. A method for dynamic channel allocation in a mobile ad hoc network comprising <i>a plurality of wireless mobile nodes and a plurality of wireless communication links connecting the plurality of wireless mobile nodes together over a plurality of separate channels</i> at different frequencies, the method comprising	<i>at each node</i> , monitoring link performance on a first channel, link performance being based upon at least one quality of service (QoS) threshold; <i>at each node</i> , scouting one or more other available separate channels at different frequencies when the monitored link performance on the first channel falls below the QoS threshold by at least

Not only do each of these claims rely upon the preamble for antecedent basis, but that reliance is necessary to provide important and critical structure to the claim, as detailed further below.

As shown above and below, each preamble provides antecedent basis to the body of the claims and recites important aspects of the alleged inventions that are not understood “solely from body of the claim.” *See Uniloc 2017 LLC v. Verizon Communs., Inc.*, No. 2:18-cv-00536-JRG, 2020 U.S. Dist. LEXIS 27600, at *31 (E.D. Tex. Feb. 17, 2020).

A. “A communication method for a wireless communication network comprising a plurality of mobile nodes each comprising a data queue, the method comprising” (’986 Patent, cl. 25)

The preamble of claim 25 is relied upon as the antecedent basis for limitations in the body of the claim. The preamble introduces “a plurality of *mobile nodes each comprising a data queue*,” while the body of the claim requires that semi-permanent links are scheduled “between *respective pairs of mobile nodes* for transmitting data stored in *the data queues therebetween*.” (emphasis added). Accordingly, the “respective pairs of mobile nodes” and “data queues” in the body refer to the preamble, indicating that both are used to define the invention.

Moreover, the preamble also states an important aspect of the invention that is not understood solely from looking at the body of the claims. Specifically, the preamble recites that the claimed method takes place in a “wireless communication network,” an integral aspect of the invention. *See* Ex. 1 (the “’986 Patent”) at 2:16-19 (“It is an object of the present invention to

schedule time slots . . . in a *mobile wireless network*.”) (emphasis added) *see also* Madisetti Decl., ¶ 27 (stating that a key characteristic of the ’986 Patent is wireless connectivity).

B. “A method for routing message data from a source node to a destination node in a mobile ad hoc network comprising a plurality of intermediate mobile nodes between the source node and the destination node, and a plurality of wireless communication links connecting the nodes together, the method comprising” (’310 Patent, cl. 13)

The preamble of claim 13 of the ’310 Patent is limiting. First, it provides antecedent basis to terms in the body of the claim. As shown above, the preamble recites both “a source node” and “a destination node,” terms that are repeatedly referenced in the body of the claim with a definite article. Furthermore, the “link metric” term used in the body of the claim refers to a metric of the preamble’s “wireless communication links” that are claimed to connect the source, destination, and intermediate mobile nodes together in a mobile ad hoc network.

Additionally, the preamble states that the method is carried out “in a mobile ad hoc network comprising a plurality of intermediate mobile nodes between the source node and the destination node” and that the nodes are connected by a “plurality of wireless communication links.” These claimed features are both described as important features of the invention and are necessary to fully understand the body of the claim. *See* Ex. 2 (the “’310 Patent”) at 2:53-64. Additionally, Stingray’s proposal would read out the requirement that the MANET must have “a plurality of intermediate mobile nodes” between the source and destination nodes. *See id.* at cl. 13. Without the requirement of intermediate nodes (and therefore multiple possible routes), concepts integral to the claimed invention, such as the act of discovering routing, ranking discovered routes, and distributing data along a plurality of routes would make little sense, because the claim language would require only a source and destination node with no other nodes in between.

C. “A method for operating a mobile ad hoc network comprising a plurality of wireless mobile nodes and a plurality of wireless communication links

connecting the plurality of nodes together over a plurality of electrically separate wireless channels, the method comprising” (’426 Patent, cl. 8)

The preamble of claim 8 of the ’426 Patent provides necessary antecedent basis for the claims. The “electrically separate wireless channels” are introduced in the preamble and then referenced in the body of the claims using the definite article for “*the* electrically separate channels,” incorporating the preamble’s limitations for that term. Moreover, the applicants specifically amended the preamble during prosecution to require the claimed channels to be “electrically separate wireless channels.” *See* Ex. 8 at 4; Ex. 9 at 2. If the preamble were not limiting, no change to it would have been necessary. Indeed, applicants specifically argued that their invention was patentable due to such language. Ex. 8 at 4; Ex. 9 at 10.

Additionally, the preamble recites necessary structure that tethers important aspects of the claimed invention to the claim’s body, explaining that the claimed channels are electrically separate *wireless* channels over which wireless communication links connect a plurality of wireless mobile nodes in a mobile ad hoc network. *See also* Ex. 3 (the “’426 Patent”) at 2:40-43.

Moreover, the applicants emphasized the very features that Stingray now says are not limiting when prosecuting the patent to distinguish the invention from the prior art:

In general, the invention is directed to a multichannel **mobile ad hoc network** and method to efficiently make use of a plurality of channels. The network includes a **plurality of wireless mobile nodes and a plurality of wireless communication links connecting the plurality of nodes together over the plurality of channels**. As discussed in the background section of the specification, **conventional mobile ad-hoc network routing protocols assume that all nodes are on the same channel permanently. This single channel operation is a factor in the bandwidth availability. Although some networks may use a separate control channel to reduce overhead on the transmission channel, conventional mobile ad-hoc networks do not utilize multiple channels for transmitting packet data.**

Ex. 8 at 2 (emphasis added); *see also id.* at 4.

D. “A mobile ad-hoc network (MANET) comprising” (’117 Patent, cl. 24) / “An intrusion detection method for a mobile ad-hoc network (MANET) comprising a plurality of nodes, the method comprising” (’117 Patent, cl. 55)

The preambles of the '117 Patent are also limiting. As shown above, each claim body relies on the preamble for antecedent basis. The preambles also recite necessary structure that tethers important aspects of the claimed invention to the body of the claim and is necessary to fully understand the claimed limitations. *See* Ex. 4 (the "'117 Patent") at 2:25-28 ("In view of the foregoing background, it is therefore an object of the present invention to provide a *mobile ad-hoc network (MANET)* with intrusion detection features and related methods.") (emphases added); *see also* Ex. 14 at 22 (arguing in prosecution the claims are directed to MANETs).

E. "An intrusion detection method for a wireless local or metropolitan area network comprising a plurality of stations, the method comprising" ('678 Patent, cl. 51)

As shown above, the claim body of claim 51 of the '678 Patent relies on the preamble for antecedent basis. The preamble also recites necessary structure and tethers important aspects of the claimed invention to the body of the claim and is necessary to fully understand the limitations stated in the body of the claim. *See* Ex. 5 (the "'678 Patent") at 2:32-35 ("In view of the foregoing background, it is therefore an object of the present invention to provide *a wireless LAN/MAN* with intrusion detection features and related methods.") (emphasis added); *see also* Ex. 15 at 2 (arguing during prosecution that claims are directed to a wireless local or metropolitan area network comprising a plurality of stations); Ex. 16 at 2 (same).

F. "A method for dynamic channel allocation in a mobile ad hoc network comprising a plurality of wireless mobile nodes and a plurality of wireless communication links connecting the plurality of wireless mobile nodes together over a plurality of separate channels at different frequencies, the method comprising" ('961 Patent, cl. 1)

The preamble of claim 1 of the '961 Patent should likewise be construed as limiting. As indicated in the table above, the claim body relies on the preamble for antecedent basis. The preamble also recites necessary structure and tethers important aspects of the claimed invention to the body of the claim and is necessary to fully understand the limitations stated in the body of the

claim. *See* Ex. 7 (the “’961 Patent”) at 2:52-55 (“In view of the foregoing background, it is therefore an object of the present invention to provide dynamic channel allocation *in a mobile ad hoc network to efficiently make use of a plurality of channels.*”) (emphasis added); *see also* Ex. 17 at 16 (arguing during prosecution that the claims are directed to a MANET comprising a plurality of wireless mobile nodes and a plurality of wireless communication links connecting the plurality of nodes together over a plurality of channels).

II. “MOBILE NODE(S)” AND “MOBILE AD HOC NETWORK / MANET” TERMS

The terms “mobile node(s)” and “mobile ad hoc network”/“MANET” appear in several Asserted Patents. While Stingray disputes whether the term is limiting depending on whether it appears only in a preamble, the parties agree that the terms have the same meaning across all patents, and that the construction of MANET should incorporate the term “mobile nodes.”

A. “mobile node(s)” (’986 Patent, cl. 9, 25; ’310 Patent, cl. 13; ’426 Patent, cl. 8, 18; ’961 Patent, cl. 1)

Signify’s Construction	Stingray’s Construction
“a node that is movable while in use; not a fixed node”	“a device in a wireless communications network that can be moved”

The term “mobile node(s)” means a “node that is movable while in use; not a fixed node.” This construction is consistent with the term’s plain and ordinary meaning as understood by skilled artisans at the time of the invention. Stingray’s construction, however, attempts to encompass *any* device in a wireless network that can be moved. Importantly, both parties’ experts agree that the term excludes fixed nodes from its scope. *See* Ex. 21 (“Akl Decl.”), ¶¶ 45, 55; Madisetti Decl. ¶ 26. Furthermore, they also agree that the term references only devices that can communicate wirelessly because POSITAs in the networking art understood the term “mobile node” to have a specific meaning separate from the lay term “mobile.” *See* Akl Decl. ¶ 48; Madisetti Decl. ¶ 27.

However, as Dr. Akl explains, “mobile node” had a particular meaning that was understood in the networking art and refers to a node that is movable while in use. Akl Decl. ¶¶ 45–49. Ex. 10 (defining “mobile station” as “[a] radio station that is used *while in motion* or during stops at unspecified locations.”) (emphasis added). Both the contemporaneous IEEE 802.11 and 802.15.4 standards defined mobile device (or mobile station) as a device or station that “uses network communications *while in motion*.” *Id.* ¶ 46; *see also* Ex. 19 at 5; Ex. 20 at 6. Dr. Akl further noted that both standards would have been well known and that both *distinguished* “mobile” nodes from merely “portable” nodes, which are nodes that can be moved from location to location but that are only used in a fixed location. Akl Decl. ¶ 47; Ex. 19 at 9; Ex. 20 at 6.

Stingray argues that these ubiquitous standards should be ignored because the Patents-in-Suit do not formally incorporate them by reference. The evidence, however, shows how the most well-known local wireless network art used the relevant terms. Moreover, the 802.11 standard is explicitly cited in five of the Asserted Patents, confirming that a POSITA would understand the terms used in these standards when interpreting the patent claims. *See* ’678 Patent at 1:47-63, 5:52-6:7, 6:61-7:8; ’986 Patent at 36:62-67; ’426 Patent at 7:7-22; ’572 Patent at 1:25-2:26, 4:31-41, claim 3 (claiming device based upon 802.11 standard); ’961 Patent at 13:33-50).

Moreover, Dr. Akl also pointed out the flaws in Stingray’s construction, noting that “while an 8-foot-long base station antenna for a cellular tower is a ‘device in a wireless communications network’ and these antennas are commonly shipped on trucks for installation and therefore ‘can be moved,’ no POSITA would consider such a device to be a ‘mobile node’ because it is intended to be used in a fixed location and is not movable while in use.” *Id.* ¶ 45. Signify’s construction is also consistent with the way the term “mobile node” is used across the patents and in the art. For example, the ’117 Patent states that a MANET’s nodes may include “laptop computers, personal

data assistants (PDAs), cellular telephones, or other suitable devices.” ’117 Patent at 5:30-37; *see also* ’429 Patent at 4:64-67; ’310 Patent at 5:5-8; ’961 Patent at 5:9-12. These statements only refer to battery-powered nodes that can be used while in motion. Akl Decl. ¶ 48. This list of nodes confirms that the term “mobile node” was being used consistently with its understood meaning, a node that is movable *while in use*. *See id.* Moreover, the ’986 Patent’s statement that the “**wireless** mobile nodes 12a-12h are **operating in a mobile network**” defeats Stingray’s attempt to suggest that all wireless nodes are mobile nodes. ’986 Patent at 9:5-6 (emphasis added). The ’986 Patent’s mobile nodes “may be ground based and/or airborne, whereby **they are continuously entering into and dropping out of the network 10.**” *Id.* at 9:6-8 (emphasis added). Thus, the ’986 Patent describes the mobile nodes as being used while in motion to form a MANET.

Stingray’s opening brief fails to address any of the above language. Instead, its argument is narrowly limited to two sections of the ’426 Patent. Stingray first cites the following statement:

An ad hoc network can be quickly deployed and provide much needed communications. Ad hoc networks will allow people to exchange data in the field or in a class room without using any network structure except the one they create by simply turning on their computers or PDAs, for example.

’426 Patent at 1:24-29. But this section only refers to ad hoc networks *generally*, not to *mobile* ad hoc networks. And Stingray incorrectly assumes that the “computers” used in the phrase must refer to only desktop computers, ignoring well-known and used mobile (laptop) computers.

Second, Stingray supposes that because the ’426 Patent states “[n]odes are *often* powered by batteries,” it must mean that a wired power source can be used, restricting the movement of the node while in use. ’426 Patent at 1:38. This is not true; the statement does not say “**mobile** nodes are often powered by batteries.” Indeed, the situation where the “node” is powered by batteries is an important aspect of what makes a given node a mobile node. *See* Akl Decl. ¶ 48. In addition, the specification makes clear (and both experts agree) that a “mobile node” cannot be a fixed node.

See Akl Decl. ¶¶ 45, 55; Madisetti Decl. ¶ 26. For example, the specification’s statements—that a MANET is “formed of mobile nodes only” and lacks “any fixed infrastructure”—indicate that the claimed mobile nodes making up the network cannot be fixed nodes. ’426 Patent at 1:16-21. Further, the fact that a “mobile node” cannot be a fixed node is supported by the specification’s statement that “nodes must self-organize and reconfigure *as they move, join, or leave the network*.” *Id.* at 1:32-34 (emphasis added). This language makes it clear that mobile nodes not only cannot be fixed nodes, but must be able to move while in use.

B. “mobile ad hoc network” / “MANET” (’310 Patent, cl. 13; ’426 Patent, cl. 8, 18; ’117 Patent, cl. 24, 55; ’961 Patent, cl. 1)

Signify’s Construction	Stingray’s Construction
“a network consisting of only a number of geographically-distributed, mobile nodes wirelessly connected by one or more radio frequency channels, which lacks any fixed infrastructure”	“a network consisting of a number of geographically-distributed, potentially mobile nodes wirelessly connected by one or more radio frequency channels, which lacks fixed infrastructure such that nodes must self-organize and reconfigure as they move, join or leave the network”

Signify and Stingray agree on several aspects of the construction for “mobile ad hoc network” / “MANET.” However, two closely related disputes remain surrounding whether such a network must *only* include mobile nodes, and whether such nodes must actually be “mobile nodes” or only “potentially mobile nodes.”

Stingray touts its construction as a “direct quote” from the ’426 Patent in criticizing Signify’s construction. Op. Br. at 10. Stingray apparently believes that the use of the term “potentially” means that the nodes do not actually need to be mobile nodes; rather, in Stingray’s apparent interpretation, the nodes comprising the MANET may be mobile nodes *or not*. Despite Stingray’s assertions that its construction is more faithful to the ’426 Patent’s specification, it fails to acknowledge the specification’s text one line below its “direct quote,” which clarifies that a

MANET “**is formed of mobile nodes only . . .**” ’426 Patent at 1:19-21; *see also* ’961 Patent at 1:20-21 (same); ’310 Patent at 1:18-20 (same); Akl Decl. ¶ 58. Stingray’s use of “potentially” mobile nodes threatens to invite ambiguity into the construction—could non-mobile nodes capable of alteration be “*potentially* mobile”? To the extent Stingray is concerned about a requirement that the nodes must actually *be in motion*, the specification paragraph that both parties rely on makes clear that the term “potentially” refers “only to the fact that the claimed mobile nodes need not actually *be in motion* to constitute a mobile ad-hoc network.” Akl Decl. ¶ 57. However, all must still be “mobile nodes” that can be used while in motion (or moved while in use). *Id.* This is consistent with Signify’s construction of “mobile nodes,” which recognizes that mobile nodes “must be *capable* of use while in motion (or, stated differently, capable of being moved while in use).” *Id.* Accordingly, if the Court adopts either party’s construction of “mobile node,” the word “potentially” is unnecessary for the construction of MANET.

Stingray argues that Signify’s construction is improper by referencing the ’117 Patent, which states that “in some embodiments one or more nodes in the MANET 10 may be fixed to provide a bridge to a wired (or satellite) communications infrastructure, such as a telephone network, for example.” ’117 patent at 5:37-41. Yet this passage contradicts Stingray’s own construction and the very next paragraph of its brief. The portion of the ’426 Patent cited by Stingray for its verbatim construction notes that “the most distinctive feature of mobile ad hoc networks ***is the lack of any fixed infrastructure.***” ’426 Patent at 1:17-19; *see also* ’117 Patent at 1:18-21 (same language). Thus, given the ’117 Patent’s explicit statement that a MANET’s “most distinctive feature” “is the lack of any fixed infrastructure,” the use of the phrase “one or more nodes in the MANET 10 may be fixed to provide a bridge” teaches that one or more nodes may be “arranged to” provide a bridge. *See* ’117 Patent at 5:37-41. Additionally, while both parties agree

that the construction must indicate that the MANET lacks any fixed infrastructure, Stingray argues that the term must further include the phrase “such that nodes must self-organize and reconfigure as they move, join or leave the network.” First, as mentioned above, this proposed language confirms the fact that the mobile nodes in the network must be capable of movement while in use. Second, adding this limitation into the construction of “MANET” adds unnecessary ambiguity as this language describes a characteristic of a MANET that is unnecessary to define it. Stingray’s construction adds ambiguity as to whether nodes in the network must actually “self-organize and reconfigure as they move, join or leave the network” for the network to be considered a MANET, essentially undoing the “potentially mobile” construction Stingray advocates for. The Court should reject this confusing and improper language.

Extrinsic evidence also supports Signify’s construction. U.S. Patent No. 6,850,532, filed in 2002, describes the MANET Working Group’s definition of “mobile ad hoc network”:

According to the MANET Working Group, the “mobile ad hoc network” (MANET) is *an autonomous system of mobile routers* (and associated hosts) connected by wireless links—the union of which form an arbitrary graph. The *routers are free to move randomly and organize themselves arbitrarily*; thus, the network’s wireless topology may change rapidly and unpredictably. Such a network may operate in a standalone fashion, or may be connected to the larger Internet

Ex 11 at 1:23-30 (emphasis added); *see also* Akl Decl. ¶ 60. Moreover, a paper titled *MANETconf: Configuration of Hosts in a Mobile Ad Hoc network* (published in June 2002) states that a MANET is “a group of *mobile, wireless nodes* which cooperatively and spontaneously form an IP-based network. This network is *independent of any fixed infrastructure* or centralized administration.” Ex. 12 at 1 (emphasis added). *See* Akl Decl. ¶ 59. Accordingly, both sources further confirm that a MANET is made up of only mobile nodes and lacks a fixed infrastructure. *See* Akl Decl. ¶ 61.

III. U.S. PATENT NO. 6,958,986

A. “semi-permanent time slots” (claims 9 and 25)

Signify's Construction	Stingray's Construction
"time slots used to establish communication links to neighboring mobile nodes and are reserved for the duration of that link across a series of frames"	"time slots reserved for communication links between neighboring mobile nodes"

Stingray's proposed construction entirely reads out the "semi-permanent" requirement the term. As a preliminary matter, the Court should hold that semi-permanent time slots must *establish* communication links, not *reserve* links as Stingray proposes. Stingray does not provide any opposition to the term "establish." The claim language requires that the claimed semi-permanent time slots "establish communication links." *See* '986 Patent, cls. 9, 25. The specification also makes it clear that "semi-permanent" time slots are initially reserved for a link across a series of frames; the very meaning of the time slot being "semi-permanent." *See* '986 Patent at 38:37-42 ("In accordance with this aspect of the invention, a request for on-demand time slots from one node to a neighbor node is allowed only if *a* semi-permanent time slot is *allocated for the link* between these two nodes. After a link is allocated at least *one* semi-permanent time slot, *then a node may request a periodic allocation of an additional time slot.*") (emphasis added). Without the semi-permanent time slot being reserved across a series of frames, the specification's language allowing for additional *periodic* allocations of additional time slots would be nonsensical.

Stingray argues that the language in the '986 Patent stating that the controller includes a semi-permanent time slot unit for scheduling a respective time slot "for each time frame for establishing a communication link" must mean that Signify's construction is incorrect. *See* Op. Br. at 12. However, the above statement simply indicates that the semi-permanent slot is scheduled for each time frame, which is part of what makes the time slot *semi*-permanent (i.e., it repeats each time frame). Stated differently, the above language acknowledges that each time frame has a semi-

permanent time slot; it does not require the semi-permanent time slot unit to *reschedule* the semi-permanent time slot every time frame. *See* '986 Patent at 26:20-25.

Finally, Stingray points to the fact that time slots can be reallocated to argue that Signify's construction that semi-permanent time slots are reserved for the duration of the link is improper. First, the specification contains multiple examples indicating the permanent nature of semi-permanent time slots. *See* '986 Patent at 19:10-13 ("SP allocated time slots are returned to the free state *only* if the link is lost or if the topology control function determines that a particular link should no longer be in the list of the top N links to be established with neighbor nodes.") (emphasis added); *see also id.* at 18:56-60. Second, Signify's construction only requires that a semi-permanent time slot is initially *reserved* for the duration of a link, not that the time slot *must last* for the duration of the link. *See* '986 Patent at 26:46-48.

B. "demand assigned time slots" (claims 9 and 25)

Signify's Construction	Stingray's Construction
"time slots utilized by nodes to send additional data over links for which semi-permanent time slots also have been allocated in response to the link utilization metrics"	"time slots allocated based on utilization or data priority"

As a preliminary matter, Stingray misconstrues or misapprehends Signify's construction. Signify's construction requires that demand assigned time slots be allocated in response to link utilization metrics, not semi-permanent time slots. The prepositional phrases beginning with "for which" and beginning with "in response" both modify the time slots being described at the beginning of the construction. Accordingly, there is no dispute there.

Stingray's argument that the time slots can somehow be reserved by nodes that do not have a semi-permanent time slot is contradicted by the claims themselves. Stingray has already admitted that the demand assigned time slots must be allocated in response to link utilization

metrics. Op. Br. at 13. And both claims require that the link utilization metrics are “based upon a quantity of data previously sent over the communication link during the *semi-permanent time slots*.” Further, the “link utilization metrics” discussed in this part of the claim form the antecedent basis to the “link utilization metrics” used in conjunction with the demand assigned time slots, removing any doubt that the limitations are talking about same link utilization metrics. *See* ’986 Patent at cls. 9, 25. Accordingly, the claims themselves explicitly require that the demand assigned time slots be assigned to nodes that have a semi-permanent time slot. *See Oak Tech., Inc. v. ITC*, 248 F.3d 1316, 1329 (Fed. Cir. 2001) (noting that courts cannot read an express limitation out of a claim even if the patent includes other embodiments). Further, the specification teaches that demand assigned time slots can only be allocated *after* semi-permanent time slots. ’986 Patent at 14:1-7; *see also id.* at 26:44-53; 27:58-28:5; 38:37-44.

C. “link utilization metrics” (claims 9 and 25)

Signify’s Construction	Stingray’s Construction
“measurements associated with a link based upon that link’s usage or demand”	“measures of link quality, usage, or capacity”

Stingray’s construction is contrary to the language of the claims themselves and attempts to import a limitation from the specification. Both claims require that the link utilization metrics be based upon “a quantity of data previously sent over the communications link” (usage) and the data queue (demand). But there is no support that either “capacity” or “quality” are link *utilization* metrics. Indeed, capacity metrics are parsed out and defined separately: *See* ’986 Patent at claims 12, 28 (claiming that demand assigned time slots are reallocated based on link utilization metrics and then separately claiming additional allocation based upon “capacity link utilization metrics”); *id.* at 41:17-19. As for “quality,” the section cited to by Stingray (*id.* at 4:46-5:30) makes no mention at all of “quality” being a link utilization metric, instead referring only to reallocation

based on link quality. Secondly, even if these were defined as “link utilization metrics” in the patent (they are not), the claim language of both claims at issue makes it clear that the link utilization metrics must be based upon “quantity of data previously sent over the communication link during the semi-permanent time slots and the data queues.”

IV. U.S. PATENT NO. 6,961,310

A. “link metric” (claim 13)

Signify’s Construction	Stingray’s Construction
Indefinite	measure of a link attribute (such as delay, capacity, available capacity, or reliability)

A POSITA would not understand the scope of the term “link metric” with reasonable certainty, and the Court should hold that this term is indefinite. *See* Akl Decl. ¶ 64. Stingray’s open-ended proposed construction is further evidence of its indefiniteness. The specification notes only that the “link metric” “*may* include a measurement of link delay, link capacity, link available capacity, and/or link reliability.” ’310 Patent at Abstract (emphasis added) Akl. Decl. ¶ 67. Stingray does not dispute this fact, arguing only that the patent also states that link metrics can include “a variety of measures,” an impermissibly vague phrase that further underscores the ambiguity surrounding the term. Op. Br. at 14-15.

But “link metric” is not a term of art. One skilled in the art would have been unable to “ascertain whether certain possible measurements would or would not be considered a link metric.” Akl. Decl. ¶ 65. As Dr. Akl explained, this can be plainly seen by looking at a number of examples: including that “[i]t is not at all clear whether, for example, an IP address or an SSID would qualify as a ‘link metric,’ or if the type of encryption used by the connection, the channel that the link is communicating on, or the assigned frequency for the link would so qualify.” *Id.*

Stingray’s attempt to add definiteness to the term through its proposed construction does nothing to further define the bounds of the term. *See* Akl Decl. ¶ 66. Stingray’s parenthetical portion is not limiting and merely points to the examples mentioned above, attempting to import limitations from the specification to preserve the claim’s validity. Further, Stingray’s construction simply replaces the “metric” in “link metric” with “attribute” which is subject to the exact same problems mentioned above. *See id.* Tellingly, nowhere in Stingray’s brief does Stingray state what a POSITA would have understood the *boundaries* of “link metric” to be. Instead, Stingray argues that “[d]efiniteness does not require enumeration of all possible link metrics.” Op. Br. at 14. But this misses the point. What is required is the ability for a POSITA to understand with reasonable certainty whether or not they would be infringing the claim. Finally, Stingray points to the declaration of its expert to state that a POSITA would have understood the scope. However, the declaration also fails to specify how a POSITA would have known the boundaries of this term, and instead merely notes that the link metric would be a measurement and that “there can be many.” *See* Madisetti Decl. ¶¶ 84-85.

B. “routes” (claim 13)

Signify’s Construction	Stingray’s Construction
Plain and ordinary meaning	“one or more communication links between two nodes”

The Court should construe the term “routes” as having its plain and ordinary meaning and reject Stingray’s erroneous, and overly broad construction. The specification makes clear that “routes” are the path over which message data may be sent from a *source node to a destination node*, not any link between intermediate nodes. For example, claim 13 claims “[a] method for routing message data from a source node to a destination nodes” and further states “at the *source node*, simultaneously distributing the message data *to the destination node* along a plurality of the

discovered *routes* based upon the ranking.” (emphasis added); *see also* ’310 Patent at 6:48-50 (“As discussed, the present invention provides the discovery and use of multiple routes with appropriate metrics for each *to the destination*.”) (emphasis added); *id.* at 5:1-20. This understanding is also consistent with contemporaneous art. For example, U.S. Pat. Pub. No. 2004/ 0025018 (filed on January 23, 2003) (Ex. 13), states the following at [[0037]]:

In an ad hoc network, when a source one of the nodes 12 denoted S wants to transmit a message to a destination one of the nodes 12 denoted T, the source node S must determine a route by which the message will be transmitted. The route is comprised of a sequence of the links 16 in combination with one or more intermediate ones of the nodes 12, which relay the message along the desired route.

Accordingly, Stingray’s construction is flawed as it does not specify that the route must go from a source node to a destination node. Moreover, Stingray’s belief that the route may also “consist of only a single link if the two nodes are adjacent” is specifically rejected by the claim language, which requires that the routed data be sent from “a source node to a destination node in a mobile ad hoc network *comprising a plurality of intermediate mobile nodes between the source node and the destination node*.” The court should reject Stingray’s overly broad, erroneous construction and hold that the term has its plain and ordinary meaning.

V. U.S. PATENT NOS. 7,082,117 AND U.S. 7,224,678

A. “operating in a contention-free mode” and “contention-free periods”/ “CFPs” (claims 24 and 55 of the ’117 Patent)

Signify’s Construction	Stingray’s Construction
“operating in a contention-free mode”	
“operating with channel usage controlled by a designated control node without contending for channel access”	“operating in a manner wherein channel usage is controlled such that nodes do not need to contend for channel access”
“contention-free periods”/ “CFPs”	

“a period of time during which channel usage is controlled by a designated control node and nodes do not contend for channel access”	“period(s) designated for operation in a contention-free mode”
--	--

The parties agree that the dispute for these terms rests in part on whether a “designated control node” is necessary. Stingray argues that Signify improperly adds “control node” to the claims because only a single embodiment supports that “channel usage” must be “controlled by a designated control node.” Op. Br. at 16. However, *this is* the claimed embodiment referring to contention-free operation. The specification discusses several embodiments of the invention for detecting various types of intrusions in the network such as detecting frame check sequence errors in a MAC address or detecting an illegal NAV value, and Stingray is correct, that in *these embodiments* there is no mention of a “control node.” However, where the specification teaches how contention-free periods operate, it describes the necessary use of a designated control node. See ’117 Patent at 7:6-17; Akl Decl. ¶¶ 79, 85.

Without a designated control node, the nodes must contend for channel access, which makes the control node necessary for CFP operation. Dr. Akl states that “[t]he use of a specifically designated control node during contention-free mode operation is a critical and distinguishing feature of such operations, because without such a control node the nodes would be unable to operate without contending for channel access.” Akl Decl. ¶ 80. Indeed, Dr. Akl specifically rejects Stingray’s construction because “it fails to include the requirement of a designated control node that a POSITA would understand is a requirement of operating in a contention-free mode. . .” Akl Decl. ¶¶ 83, 88.

B. “intrusion alert” (claims 24 and 55 of the ’117 Patent; claims 12 and 51 of the ’678 Patent)

Signify’s Construction	Stingray’s Construction
“a notification generated and sent by the policing node(s) upon detecting an attempted intrusion”	“a notification indicating detection of an anomaly or abnormal event”

The parties agree that an “intrusion alert” is a type of notification. Op. Br. at 17. Stingray, however, proposes including within its scope notifications that are not notifications about intrusions at all. The specification of both the ’117 Patent and the ’678 Patent repeatedly discuss that the intrusion alert is generated and sent by a policing node upon detecting an attempted intrusion. *See, e.g.*, ’117 Patent at Abstract, 3:11-14; ’678 Patent at Abstract, 3:22-27; *see also* Akl Decl. ¶ 97. Indeed, the term “intrusion” is mentioned 207 and 208 times in the ’117 Patent and the ’678 Patent. The words “anomaly” and “abnormal” are mentioned three times in the ’117 Patent, *exclusively* in the statement Stingray cites in its brief in support of its construction. Moreover, the words “anomaly” and “abnormal” do not appear a single time in the ’678 Patent.

Stingray’s inclusion of “detection of an anomaly or abnormal event” is nothing more than an attempt to broaden the clear disclosures of the ’117 Patent and ’678 Patent. Stingray states that the intrusions disclosed in the ’117 Patent and the ’678 Patent “would be understood by a POSITA as abnormal or anomalous events that would ‘indicate that this node [that is creating the event] is not an authorized node.’” Op. Br. at 18. Signify does not contest that certain categories of anomalies or abnormal events are recognized as attempted intrusions. However, it does not follow that *all* anomalies or abnormal events are recognized as attempted intrusions. As recognized by Dr. Akl, a POSITA would see this construction as “overbroad and would encompass notification that are not ‘intrusion alerts’ but are simply error messages or other notifications regarding

abnormal events.” Akl Decl. ¶ 96. Stingray offers no expert testimony to support its overbroad construction.

VI. U.S. PATENT NO. 7,440,572

A. “encrypting both address and data information” and “decrypting both the address and data information” (claim 1)

Signify’s Construction	Stingray’s Construction
Encrypting . . . : “reversibly encoding both MAC address and MAC data information to protect from reading without decryption”	Plain and ordinary meaning.
Decrypting . . . : “recovering, upon reception, both the MAC address and the MAC data information that was encrypted”	Plain and ordinary meaning.

Signify’s constructions are supported by the intrinsic record as the claims and specification both regularly make it clear that both the MAC address and the MAC data are encrypted and decrypted. For example, claim 1 states “a cryptography circuit carried by said housing and connected to said MAC.” *See* Ex. 6 (the “’572 Patent”) at 2:6-7. The specification also states:

The cryptography circuit may encrypt both address and data information for transmission, and decrypt both address and data information upon reception. Accordingly, a higher level of security may be provided by the encryption of the address and control portions of the transmitted packet contained within the MAC generated header. This information is not encrypted in conventional LAN cryptographic devices.

’572 Patent at 2:7-13 (emphasis added). This is similarly shown in Figure 8, which shows that the address information 91, 92, 93, and 94 is located in the MAC header. Figure 8 also shows that the MAC header is located within the encrypted MAC protocol data unit 90, abbreviated as “MPDU.”

Stingray admits that the MAC address and data are what is encrypted and decrypted in its Opening Brief, agreeing that “[t]he specification states, in one embodiment, that ‘*the MAC 60 generates a payload 80 including a header 81, the data 82, and a CRC code 83*’ and ‘[t]his

payload 80 is combined with the cryptography generated bits 85 and the baseband processor generated bits 84.” Op. Br. at 30 (emphasis added).

Lastly, Dr. Akl agrees that from the perspective of a POSITA, “the specification of the patent itself, which states that the cryptography circuit (which, as described previously and as specifically recounted in the claims, is connected to the MAC) encrypts both the address and the data information *of the MAC*.” Akl Decl. ¶ 117 (emphasis in original).

VII. U.S. PATENT NO. 7,616,961

A. “monitoring link performance on a first channel” (claim 1)

Signify’s Construction	Stingray’s Construction
“on an ongoing and recurring basis, analyzing link performance of the first channel”	Plain and ordinary meaning.

The intrinsic record supports Signify’s construction, specifically that monitoring includes analyzing link performance of the first channel. For example, the specification states:

The method includes each node monitoring link performance on a first channel, link performance being based upon at least one quality of service (QoS) threshold, and *each node scouting one or more other available channels when the monitored link performance on the first channel falls below the QoS threshold.*

’961 Patent at 2:61-67; *see also* claim 1. The ’961 Patent makes it clear that monitoring includes the process of analyzing, specifically that while monitoring link performance, it is being analyzed for a drop below the accepted QoS threshold. Relevant dictionaries also teach that “monitoring” occurs on an ongoing and recurring basis. *See* Ex. 18 (defining “monitor” as “an instrument or device used for observing, checking, or keeping a continuous record of a process or quantity”); Ex. 10 (defining “monitor” as “to check or evaluate something on a constant or regular basis.”).

VIII. CLAIM LIMITATIONS GOVERNED BY 35 U.S.C. § 112 ¶ 6.

Stingray groups the five claim limitations alleged by Signify to be means-plus-function terms under one heading. To assist the Court in reviewing the parties' briefs, Signify groups these terms in the same manner.

A. The “route discovery unit...” and “route selection unit...” (claim 18 of the '426 Patent)

Signify's Construction	Stingray's Construction
Claim 18: “a route discovery unit to transmit route requests over each of the plurality of electrically separate channels to discover routing to a destination node”	
<p>Governed by Pre-AIA 35 U.S.C. 112 ¶ 6</p> <p>Function: transmit route requests of each of the plurality of electrically separate channels to discover routing to a destination node</p> <p>Structure: Indefinite for lack of corresponding structure.</p>	<p>Plain and ordinary meaning. Alternatively, if governed by § 112 ¶ 6:</p> <p>Function: transmit route requests over each of the plurality of electrically separate channels to discover routing to a destination node</p> <p>Structure: Figs. 6-8; '426 patent, 4:15-55; 5:3-31; 5:49-6:13; 6:14-31; 6:32-54; 6:32-44. 7:7-22; 8:51-67.</p>
Claim 18: “a route selection unit to select a route to the destination node on at least one of the plurality of electrically separate channels”	
<p>Governed by Pre-AIA 35 U.S.C. 112 ¶ 6</p> <p>Function: select a route to the destination node on at least one of the plurality of electrically separate channels</p> <p>Structure: Indefinite for lack of corresponding structure.</p>	<p>Plain and ordinary meaning. Alternatively, if governed by § 112 ¶ 6:</p> <p>Function: select a route to the destination node on at least one of the plurality of electrically separate channels</p> <p>Structure: Figs. 6-8; '426 patent, 4:15-55; 5:49-6:13; 6:14-54; 7:7-22; 8:51-67.</p>

Claim 18 of the '426 Patent recites a “route discovery unit” and a “route selection unit” for performing the functions recited in the claim. Both of these terms are means-plus-function terms because both would not have been understood by a POSITA as having a well understood structural meaning and both are not terms used in the art. *See* Akl Decl. ¶¶ 69, 75; *see Williamson v. Citrix*

Online, LLC, 792 F.3d 1339, 1350 (Fed. Cir. 2015). “Unit” is a nonce word that conveys no definite structure. *See* M.P.E.P. § 2181. Here, the phrases “route discovery unit to” and “route selection unit to” are essentially the same as a “unit for discovering/selecting a route by . . .” or “means for discovering/selecting a route by . . .” *See* Akl Decl. ¶¶ 69, 75. The modification of the term “unit” by “route discovery” or “route selection” fails to provide any structure to the terms.

The claim language and specification fail to provide any sufficient structure for performing the claimed function. Instead, the specification notes the unbounded nature of the terms, stating that the invention may “take the form of an entirely hardware embodiment, an entirely software embodiment, or an embodiment combining software and hardware aspects. Furthermore, portions of the present invention may be a computer program product on a computer-usable storage medium having computer readable program code on the medium.” ’426 Patent at 4:18-24; *see also* Akl Decl. ¶ 70. Additionally, when specifically describing the “route discovery unit” and the “route selection unit,” the portions of the specification identified by Stingray still fail to provide sufficient structure and instead describe the units purely functionally. Akl Decl. ¶ 70, 76; *see* ’426 Patent at Figure 7 (showing both units as boxes without providing any underlying structure); ’426 Patent at 6:45-54. Accordingly, the specification confirms that a POSITA would not understand these terms as reflecting known structures. *See Canon, Inc. v. TCL Elecs. Holdings Ltd.*, No. 2:18-CV-546-JRG, 2020 U.S. Dist. LEXIS 76751, at *139 (E.D. Tex. May 1, 2020) (finding that the term “acquiring unit” does not provide sufficient structure and the surrounding claim language simply recited the intended function of the term.)

Additionally, Stingray’s argument that certain cases have held that the term “controller,” as used in those cases, denoted sufficient structure is of no moment. *See Egenera, Inc. v. Cisco Sys.*, 972 F.3d 1367, 1374 (Fed. Cir. 2020) (“Mere inclusion of a limitation within a structure does

not automatically render the limitation itself sufficiently structural.”). The patent specification here lacks any corresponding structure for performing the claimed functions and the terms are therefore invalid for indefiniteness. *See* Akl Decl. ¶¶ 70-71, 76-77 (noting that the specification only uses functional language to describe the claim terms). Instead, the units are described in purely functional terms:

As shown in FIG. 7, the controller 44 includes a route discovery unit 50 to transmit route requests RREQ over each of the plurality of channels to discover routing to the destination node D, and a route selection unit 52 to select a route to the destination node on at least one of the plurality of channels. The route discovery unit 50 may send the route request over each of the plurality of channels sequentially, and the route request may include a channel identifier. The selected route to the destination node may include more than one of the plurality of channels.

’426 Patent at 6:45-54. Further, in describing route discovery or selection generally, the Patent again uses only functional terms. *See* Akl Decl. ¶¶ 71, 77; ’426 Patent at 5:3-31, 5:60-63.

Stingray’s brief confirms the lack of corresponding structure. Rather than pointing to any structure or algorithm, Stingray recites only functional language. For example, Stingray points to the following as conveying corresponding structure: “a route discovery unit 50 to transmit route requests RREQ over each of the plurality of channels to discover routing to the destination node D” and “[t]he route discovery unit 50 may send the route request over each of the plurality of channels sequentially, and the route request may include a channel identifier.” Op. Br. at 23-24; *see also* Fig. 7 (including only a block labeled “route selection unit” and “route discovery unit” with no actual structure). This is inadequate. *HTC Corp. v. IPCom GmbH & Co., KG*, 667 F.3d 1270, 1280 (Fed. Cir. 2012) (holding that the specification must “do more than parrot the recited function; it had to describe a means for achieving a particular outcome, not merely the outcome itself.”) The Court should find that the associated claim limitations associated with them are invalid for indefiniteness under § 112 ¶ 6.

B. The “policing node...” (claim 24 of the ’117 Patent) and the “policing station...” (claim 12 the ’678 Patent)

Signify’s Construction	Stingray’s Construction
Claim 24: “a policing node for detecting intrusions into the MANET by monitoring transmissions among said plurality of nodes to detect contention-free mode operation outside of a CFP; and generating an intrusion alert based upon detecting contention-free mode operation outside a CFP”	
<p>Governed by Pre-AIA 35 U.S.C. 112 ¶ 6</p> <p>Function: detecting instructions into the MANET by monitoring transmissions among said plurality of nodes to detect contention-free period mode operation outside of a CFP; and generating an intrusion alert based upon detecting contention-free mode outside of a CFP</p> <p>Structure: Indefinite for lack of corresponding structure.</p> <p>If not governed by Pre-AIA 35 U.S.C. 112 ¶ 6, “policing node” means:</p> <p>“a wireless node for detecting intrusions into the wireless network”</p>	<p>Plain and ordinary meaning. Alternatively, if governed by § 112 ¶ 6:</p> <p>Function: detecting intrusions into the MANET</p> <p>Structure: ’117 Patent, 5:30-6:18, 7:6-33, 9:25-39, 10:46-58, 14:6-18, Figure 4, and Figure 14.</p>
Claim 12: “a policing station for detecting intrusions into the wireless network by monitoring transmissions among said plurality of stations to detect failed attempts to authenticate MAC addresses; and generating an intrusion alert based upon detecting a number of failed attempts to authenticate a MAC address”	
<p>Governed by Pre-AIA 35 U.S.C. 112 ¶ 6</p> <p>Function: detecting intrusions into the wireless network by monitoring transmissions among said plurality of stations to detected failed attempts to authenticate MAC addresses; and generating an intrusion alert based upon detecting a number of failed attempts to authenticate a MAC address</p> <p>Structure: Indefinite for lack of corresponding structure.</p>	<p>Plain and ordinary meaning. Alternatively, if governed by § 112 ¶ 6:</p> <p>Function: detecting intrusions into the wireless network</p> <p>Structure: ’678 Patent, 5:35-44, 5:45-6:7, 6:8-31, 6:45-60, 9:13-23, 9:54-67, 12:41-55, Figures 2, and Figures 12.</p>

If not governed by Pre-AIA 35 U.S.C. 112 ¶ 6, “a policing station for detecting intrusions into the wireless network” means: “a wireless node for detecting intrusions into the wireless network”	
--	--

As noted by Stingray, claim 24 of the ’117 Patent and claim 12 of the ’678 Patent recite “a ‘policing node’ or a ‘policing station’ that perform recited functions.” Op. Br. at 25. Both of these terms are means-plus-function terms because both would not have been understood by a POSITA as having a well understood structural meaning and were not terms used in the art. Akl Decl. ¶¶ 90, 102; *see also Williamson*, 792 F.3d at 1350. Indeed, the phrases “policing node” and “policing station” are essentially the same as a “means for policing by. . .” Akl Decl. ¶¶ 90, 102.

Much of Stingray’s argument focuses on the “nodes” and “stations.” However, the ’117 Patent and ’678 Patent make clear that the “policing node” and “policing station” are non-structural terms that refer to literally any hardware or software at all, and a normal “node” or “station” would not be capable of performing the claimed function:

It will also be appreciated that the above-described invention may be implemented in several ways. For example, *the policing node 13 could be implement in one or more separate, dedicated devices* that are not already part of the MANET 10. *Alternatively, the invention may be implemented in software* to be installed on one or more existing nodes in a MANET where intrusion detection is desired.

’117 Patent at 10:52-58 (emphasis added); *see also* ’678 Patent at 10:60-67; Akl Decl. ¶¶ 90, 102. The specifications only states that “policing node” or “policing station” may be implemented inside one or more nodes or software and are not the other “nodes” or “stations” of the network.

Moreover, despite stating that the “policing node” and “policing station” can be implemented in different devices or software, nothing in the claims or the specifications clarify the structure such that a POSITA would have understood the terms to convey a definite structure that

could perform the claimed function. *See* Akl Decl. ¶¶ 91, 103. Specifically, the relevant portions of the claims only discuss the function of the policing node and policing station.

The specifications, rather than adding sufficiently definite structure, makes it clear that the term is simply a generic description for software or hardware the performs a specific function:

Turning now to Fig. 2, a first alternate embodiment of the wireless LAN/MAN 20 is now described. In this embodiment, the policing station 23 detects intrusions into the wireless networks 20 by monitoring transmissions among the stations 21, 22, to detect failed attempts to authenticate MAC addresses. Upon detecting a certain predetermined number of failed attempts to authenticate a particular MAC address, the policing node 23 will generate an intrusion alert.

'678 Patent at 6:45-52; *see also* '678 Patent at Figure 2; '117 Patent at 7:18-27, Figure 4; Akl Decl. ¶¶ 91, 103. No particular hardware or software is ever enabled or described. Accordingly, because the terms “policing node” and “policing station” is simply a generic term that fails to convey a definite structure, it is means-plus-function term and is indefinite. *Id.* ¶¶ 92, 104. Moreover, Stingray’s proposed functions do not include the entire claimed functions of the claimed policing means and recite only a portion of the claimed function, which is improper.

C. The “cryptography circuit...” (claim 1 of the '572 Patent)

“a cryptography circuit carried by said housing and connected to said MAC and said wireless transceiver for encrypting both address and data information for transmission by at least adding a plurality of encrypting bits to both the address and the data information, and for decrypting both the address and the data information upon reception”	
Signify’s Construction	Stingray’s Construction
<p>Governed by Pre-AIA 35 U.S.C. 112 ¶ 6</p> <p>Function: encrypting both address and data information for transmission by at least adding a plurality of encrypting bits to both the address and the data information, and for decrypting both the address and the data information upon reception</p>	<p>Plain and ordinary meaning. Alternatively, if governed by § 112 ¶ 6:</p> <p>Function: encrypting both address and data information for transmission; and decrypting both the address and the data information upon reception</p>

<p>Structure: Indefinite for lack of corresponding structure.</p> <p>If not governed by Pre-AIA 35 U.S.C. 112 ¶ 6, “cryptography circuit” means:</p> <p>“a circuit employing an algorithm and cryptographic key and capable of encrypting and decrypting both address and data information for transmission”</p>	<p>Structure: ’572 patent, 3:37-57; 4:14-31; 5:20-25; 5:42-6:55; 6:65-7:35; 7:52-64; Figures 1-13.</p> <p>If not governed by Pre-AIA 35 U.S.C. 112 ¶ 6, “cryptography circuit” means:</p> <p>Cryptography circuit means “a circuit capable of performing cryptography”</p>
---	---

The term “cryptography circuit” is a means-plus-function term because it would not have been understood as having a well understood structural meaning and was not a term used in the art. Akl Decl. ¶ 109; *see also Williamson*, 792 F.3d at 1350. Indeed, a POSITA would understand that a “circuit” is simply any interconnection of electrical elements for accomplishing a particular task, and the addition of the term “cryptography” does not provide further structural limitation. Akl Decl. ¶ 109. As *Stingray* notes in its opening brief, claim 1 of the ’572 Patent recites a “cryptography circuit” for performing the functions recited in the claim. Specifically, that the “cryptography circuit” performs the function of “encrypting both address and data information for transmission by at least adding a plurality of encrypting bits to both the address and the data information, and for decrypting both the address and the data information upon receptions.” ’572 Patent at cl. 1.

But the patent fails to provide any corresponding structure. *Stingray* contends that structure is disclosed in Figure 7 and through the recitation of “cryptography processor.” Op. Br. at 30. This is simply insufficient. The only structure identified at all for the cryptography circuit is a “cryptography processor 72” and “serial-to-parallel converter (CLDP) 71 connected to the MAC 60 and the cryptography processor.” *See* ’572 Patent at 5:20-25; *see also* Akl Decl. ¶¶ 110. A POSITA would understand that this structure is insufficient to perform the function of “encrypting both address and data information for transmission by at least adding a plurality of encrypting bits

to both the address and data information, and for decrypting both the address and the data information upon reception” because the claimed general purpose processor is taught without a specific algorithm for performing the claimed function. Akl Decl. ¶¶ 110–111. Moreover, Stingray’s proposed function for this term does not include the entire claimed function, but simply recites a short portion of the function, which is improper.

In the alternative, if the Court does not find the term to be governed by pre-AIA 35 U.S.C. § 112 ¶ 6, “cryptography circuit” should be construed to mean “a circuit employing an algorithm and a cryptographic key and capable of encrypting and decrypting both address and data information for transmission.” Akl Decl. ¶¶ 113. As the specification states:

The cryptography circuit *may encrypt both address and data information for transmission, and decrypt both address and data information upon reception. Accordingly, a higher level of security may be provided by the encryption of the address and control portions of the transmitted packet contained within the MAC generated header.* This information is not encrypted in conventional LAN cryptographic devices. *The cryptography circuit may implement an algorithm and use a key* to provide a predetermined security level, such as up to Type 1 security, although lower levels may also be implemented. Of course, the secure wireless LAN device may be used with other LAN devices, such as user stations and/or access points, in any of a number of different LAN configurations.

’572 Patent at 2:7-19 (emphasis added); *see also* Akl Decl. ¶ 114. Accordingly, from this disclosure, a POSITA would understand the “cryptography circuit” to mean “a circuit employing an algorithm and a cryptographic key and capable of encrypting and decrypting both address and data information for transmission.”

CONCLUSION

For the foregoing reasons, Signify respectfully requests the Court adopt its constructions.

Dated: October 13, 2021

Respectfully submitted,

/s/ Michael J. Newton

Michael J. Newton (TX Bar No. 24003844)

Brady Cox (TX Bar No. 24074084)
Adam Ahnhut (TX Bar No. 24106983)
ALSTON & BIRD LLP
Chase Tower
2200 Ross Avenue, Suite 2300
Dallas, Texas 75201
Telephone: 214.922.3443
Facsimile: 214.922.3843
Email: mike.newton@alston.com
Email: brady.cox@alston.com
Email: adam.ahnhut@alston.com

Adam D. Swain (DC Bar No. 492063)
ALSTON & BIRD LLP
950 F Street NW
Washington, DC 20004
Telephone: 202.239.3300
Facsimile: 202.239.3333
Email: adam.swain@alston.com

Lauren N. Griffin (NC Bar No. 54766)
ALSTON & BIRD LLP
One South at The Plaza
101 S Tryon St, Suite 4000
Charlotte, NC 28280
Telephone: 704.444.1059
Facsimile: 704.444.1111
Email: lauren.griffin@alston.com

Attorneys for Defendant Signify N.V.

CERTIFICATE OF SERVICE

I certify that I caused the foregoing document to be transmitted to counsel for Stingray via filing the same with the Court's CM/ECF system on October 13, 2021, which will cause a notification of same to be sent to all counsel that have appeared in this case.

/s/ Michael J. Newton
Michael J. Newton